

justifiable from the standpoint of the student or of the subject. Obviously, the author expects that by lectures or other reading and experimentation such inequalities are to be corrected.

One very helpful feature for the teacher is that various apparatus and methods of conducting experiments are either described in full or are referred to, so that they may be available. In most cases, however, it will be found that the method adopted in the book is clearly the most suitable for the elementary student, taking all things into consideration.

Much of the "normal apparatus," devised by Professor GANONG and now put upon the market, is highly convenient and useful. In some cases, however, it is doubtful whether the game is worth the candle, e. g., in the quantitative determination of transpiration; and often laboratory funds are more limited than the time of the student.

As to the particular course outlined in this guide, one must inquire whether, from the point of view of convenience, training, and knowledge acquired, the selection of experiments is the best that could be made, and whether appropriate attention is paid to the various topics. On these matters each teacher will have to form his own conclusion, because his own attitude toward the whole subject, and the special conditions under which his work is carried on, must be determining factors. Consequently, it is possible that no two would precisely agree. But we fancy there will be small disagreement with the statement that no one will fail to find this book of the greatest service in conducting elementary courses, even if he hesitates to adopt it formally as a laboratory manual; and for that purpose it is, in many respects, far and away the best that has appeared in any language.—C. R. B.

MINOR NOTICES

Javanese fresh-water algae.—Various works have contributed to make known the algal flora of Java, of which the nearly simultaneous ones by DE WILDEMAN and by GUTWINSKI are best known and most comprehensive. BERNARD, though not a professed phycologist and modestly decrying the value of his work, adds very materially to the knowledge of the Protococcaceae and Desmidiaceae, in a rather voluminous paper published by the Department of Agriculture of the Dutch Indies.² Beginning the work of collecting almost accidentally, the beauty and interest of the unicellular forms and the necessity of examining them in the living condition determined his study of them. In an introduction (45 pp.) the author, after giving briefly the history, bibliography, methods of study and collection, and the peculiarities of the localities explored, discusses the variations, adaptations, and cosmopolitanism of certain forms, states his attitude on nomenclature, and sets forth in tabular statistical form the various contributions to his subject. From this it appears that there are now known 230 species and varieties of these

² BERNARD, CH., *Protococcacées et Desmidiacées d'eau douce, récoltées à Java et décrites par C. B.* Imp. 8vo. pp. 250. pls. 16. Batavia: Landsdrukkerij. 1908.

two orders, of which BERNARD has collected and described 202. Of these 4 are new to Java, 79 others are new to the East Indian region, and 81 are described as new species or varieties. By 580 carefully drawn figures, rather crowded on the plates, the author represents all species of his collection, so that later workers can see what plants he has actually been working with. The evident care and thoroughness of the work indicate that this is no mean contribution to the knowledge of the Javenese flora.—C. R. B.

Folk names of Brazilian plants.—For some years there has been running through the *Pharmaceutical Review* a series of articles by Dr. THEODOR PECKOLT, giving the vernacular names of Brazilian plants and plant products, including both the Portuguese names and those adopted from the Tupi language. This material is now brought together in book form,³ as monograph no. 15 of the Pharmaceutical Science Series, under the editorship of Dr. EDWARD KREMERS. The vernacular names appear in alphabetic order, with the German equivalent where it exists, the scientific equivalent, including the specific name and family name, when known, and brief comments in German on the use made of the products. It is rather unfortunate that there is not an index to the scientific names, for this would undoubtedly greatly increase the usefulness of what has been a difficult and time-consuming task. The volume will be of special assistance to taxonomists, to dealers in crude drugs, and to manufacturers who call for Brazilian products.—C. R. B.

German South-polar Expedition.—The second part of the eighth volume (Botany) of the sumptuous report upon this expedition has just been issued,⁴ with an account by REINBOLD of all the seaweeds except the Lithothamniaceae, which are elaborated by FOSLIE. The collections were not extensive and no new species were found by REINBOLD. FOSLIE, however, recognized and described several new unsegmented corallines from the material obtained by this expedition, and here presents again the descriptions with photographic illustrations.—C. R. B.

NOTES FOR STUDENTS

A primitive type of seed.—OLIVER has made a most interesting contribution⁵ to our knowledge of the structure of paleozoic seeds. In 1875 WILLIAMSON

³ PECKOLT, THEODOR, Volksbenennungen der brasilianischen Pflanzen und Produkte derselben in brasilianischer (portugiesischer) und von der Tupisprache adoptirten Namen. 8vo. pp. 252. Milwaukee: Pharmaceutical Review Publishing Co. 1907.

⁴ Deutsche Südpolar-Expedition, 1901-1903, im Auftrage des Reichsamtes des Innern herausgegeben von ERICH VON DRYGALSKI, Leiter der Expedition. VIII. Band, Botanik, Heft II. (1) REINBOLD, TH., Die Meeresalgen, pp. 179-202. (2) FOSLIE, M., Die Lithothamnien. pp. 203-220. pl. 20. figs. 1-6. Berlin: Georg Reimer. 1908. M 5.

⁵ OLIVER, F. W., On *Physostoma elegans* Williamson, an archaic type of seed from the Palaeozoic rocks. *Annals of Botany* 23:73-116. pls. 5-7. figs. 10. 1909.